# *The New Jersey Clean Energy Program*

## Incentives, Regulations and Services Designed to Transform Energy Markets in New Jersey

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# *The New Jersey Clean Energy Program*

## Highlights of the Energy Re-regulation Law

- Electric Discount and Energy Competition Act of 1999 (EDECA)
- NJ Legislature charged NJBPU with implementation and oversight
- Comprehensive Resource Analysis (CRA) aka the NJ Clean Energy Program (NJCEP)
- Societal Benefits Charge (SBC) ~$125M/year, 75% for EE and 25% RE
- Encouraged State agency partnerships
- Classified eligible resources (Class I and Class II technologies)
- Regulated electric distribution companies (EDCs)
- Required Net Metering and Interconnection Standards
- Established an Interim Renewable Portfolio Standard

# *The New Jersey Clean Energy Program*

## Overview of NJBPU Implementation of CRA

- Refers to the CRA as the New Jersey Clean Energy Program (NJCEP)
- Established Office of Clean Energy (OCE) to serve as the state energy office and administer the NJCEP
- Formed the New Jersey Clean Energy Council to serve as advisors to the Board and Staff
- Contracted with Rutgers U. Bloustein School to facilitate the Clean Energy Council, manage program evaluations, assess market conditions, and analyze the economic impacts of the NJ RPS.

# *The New Jersey Clean Energy Program*

## Goals and Objectives of the NJCEP

- By December 31, 2008, six and a half percent of the electricity used by New Jersey residents and businesses will be provided by Class I and/or Class II renewable energy resources, of which a minimum of four percent will be from Class I renewable energy resources.
- By December 31, 2008, install 300 MW of Class I renewable electric generation capacity in New Jersey of which a minimum of 90 MW will be derived from photovoltaics.
- By December 31, 2012, 785,000 megawatt hours per year and 20 billion cubic feet gas per year of energy savings will be derived from energy efficiency and renewable energy measures.

# *The Suite of NJCEP Renewable Energy Programs & Budgets 2004*

- CORE $45.15 M
- REAP $16 M
- REED $6.35 M
- FREE $3 M
- REDO $3 M
- Demonstration Program $2.5 M
- Manufacturing Incentive $2 M

# *CORE Program*

- Customer On-site Renewable Energy Program – provides rebates on the installed cost of solar, wind and biomass.
- Transitioned to BPU administration in April 2003.
- 25+ MW total *commitments* (average of 200 kW per week for solar), 1.7 MW of biomass and 305 kW small wind.
- *Installed* thru Sept. '04: Solar 2.8 MW, Wind ~ 30.4 kW, Biomass 300 kW, Fuel Cell 900 kW; for a total > 3.6 MW
- Solar rebates up to 70% of installed cost if smaller than 10 kW, up to 60% for systems larger than 10kW, up to 1 MW.
- Biomass and wind rebates up to 60% for < 10kW and 30% for >10kW.

**Wind and Sustainable Biomass Systems**
See chart below for PV incentive rates

| Block Allocated Capacity | Incentive Block* | | | |
|---|---|---|---|---|
| | 1 (6.23 MW) | 2 (5.5 MW) | 3 (12.5 MW) | 4 (27 MW) |
| **Tier I** (up to 10 kW) | $5.00/watt | $5.00/watt | $4.00/watt | $3.00/watt |
| **Tier II** (from 10 to 100 kW) | $4.00/watt | $4.00/watt | $3.00/watt | $2.00/watt |
| **Tier III** (from 100 to 500 kW) | $3.00/watt | $3.00/watt | $2.00/watt | $1.50/watt |
| **Tier IV** (over 500 kW, up to 1000 kW) | $0.30/watt | $0.30/watt | $0.20/watt | $0.15/watt |
| Maximum incentive as percentage of eligible system costs | 60% | 50% | 40% | 30% |

Block Available | Block Full

*Note: Incentive levels will change over time, as the capacity allocated for each block is filled. At least 50% of the capacity in blocks 2, 3, and 4 is reserved for small systems (10 kW or less).

Chart II

| Solar Electric Systems | |
|---|---|
| **2003** | **Incentive Level** |
| **Systems up to 10kW** | $5.50/watt |
| Maximum incentive as percentage of eligible system costs | 70% |
| **Systems greater than 10kW** | |
| 1 to 10 kW | $5.50/watt |
| **>** 10 to 100 kW | $4.00/watt |
| **>** 100 to 500 kW | $3.75/watt |
| **>** 500 to 1,000 kW | $0.30/watt |
| Maximum incentive as percentage of eligible system costs | 60% |

# *Clean Energy Finance Programs*

- Renewable Energy Advanced Power Program
  (REAP, *formerly Grid Supply*) provides incentives and financing for renewable electricity generation facilities. Projects *over 1MW*.

- Renewable Energy Economic Development Program
  (REED, *formerly Infrastructure Development*) provides incentives to renewable energy companies for growing their business in New Jersey.

- Reduced Energy Demand Options Program
  (REDO) provides incentives and financing to public entities for projects including both energy efficiency and renewable electricity equipment.

- Financing for Renewable Energy and Energy Efficiency
  (FREE) provides incentives and financing to businesses for projects including both energy efficiency and renewable electricity equipment.

# *REAP Program*

- Combines 20% grant with optional guaranteed low-interest, long-term financing.
- Wind, Solar and Sustainable Biomass projects in NJ > 1 MW.
- $16 Million budget for 2004.
- Solicitation on njcleanenergy.com.

# *REED Program*

- 1st Solicitation issued in Feb. ’03
- Received 33 proposals for $12M
- 10 renewable energy companies received $2.7 M for manufacturing innovation, commercialization efforts and product financing.

# *REED for 2004*

- 2004 Funding offered as "recoverable grants" as the firm starts making a profit, the "grant" is paid back.
- $5M funding solicitation issued in November '03 with no proposal deadline defined.
- 3 responses received; 1 rejected, 1 returned and 1 under review.
- Clean Energy Council requested staff revise the program to contain both funding types; grants for Research & Development and recoverable grants for Commercialization projects – current under review.

# *FREE & REDO Programs*

The guidelines for the EDA loans requiring RE and EE are as follows:

Eligibility:

1. EE measures should be installed with or within one year prior to the RE installation;

2. EE measures must represent a 25% reduction in electric connected load (kW) and natural gas usage in therms or energy consumption in kilowatthours and therms for the facility, existing measures combined with new measures if necessary or;

3. A study of all available EE measures both prescriptive and custom should be done and 90% of the EE measures implemented along with the RE.

Who determines the eligibility:

1. If the above standards are met, forms detailing compliance must be submitted to the NJCEP C&I Program Manager for review;

2. Engineering staff in the OCE BEE shall determine in those cases where an exemption from the above standards is requested.

# *FREE Program*

- **$6.3M (leveraged)** – Low interest loans to assist small businesses that implement energy efficiency (EE) upgrades and renewable energy installations at their facility

- Combines CORE rebates with NJCEP EE rebates and low interest finance.

# *REDO Program*

**$6M** **(leveraged)** – provides incentives and financing to assist government entities and schools for renewable electricity generation facilities and energy efficiency upgrades

Combines CORE rebates with NJCEP EE rebates and low interest finance.

# *Energy Regulation as a Driver*

- Renewable Portfolio Standards
  - Solar carve-out requires 120,000 MWh by 2008 translates into roughly 90 MW
  - Percentages accelerated for Class I required
- Net Metering and Interconnection
  - Simplified interconnection
  - Increased capacity limit for net metering

# *Net Metering and Interconnection*

- Updates net-metering and interconnection standards (subchapter 9).
- Increases net-metering capacity from 100 kW to 2 MW.
- Extends eligibility to all Class I renewables
- Makes interconnection processes, simplified, transparent and time limited.

# *Renewable Portfolio Standard Solar Requirement*

- Required for all electric suppliers.
- Accelerates % 2004 through 2008
- Facilitates Renewable Energy Certificates REC – attributes trading
- Sets Alternative Compliance Payments
- Adopted April 19, 2004

# *Introducing the SREC*

- A solar renewable energy certificate (SREC) is the "attribute" of solar electric generation, unbundled from the actual energy delivered, equivalent to 1 MWh.
- Solar electric generation is electricity from photovoltaics or other solar technologies.
- New Jersey's Renewable Portfolio Standard mandates all retail electric suppliers procure an increasing percentage of solar electricity.

# *SREC Requirement by Year*

- RY 2005  0.0100 % ~ 3.6 MW
- RY 2006  0.0170 % ~ 6.12 MW
- RY 2007  0.0393 % ~ 22.5 MW
- RY 2008  0.0816 % ~ 46.7 MW
- RY 2009  0.1600 % ~ 90 MW

# *The SREC Market*

The NJBPU's RPS rules:

- Mandate use of the Office of Clean Energy's SREC system to document compliance.
- Require the solar electric system be connected to the local distribution system.
- Set an Alternative Compliance Payment for SRECs (SACP) of $300 per MWh or $0.30 per kWh which sets a ceiling on the price of an SREC.
- Are expected to lead to prices from $100 to $250
- Effectively reduce investment paybacks to below 10 yrs.

# *How it Works*

- Customer-generators sign an attestation verifying ownership of the RECs (not previously sold)
- The system administrator, through an online registry, sets up an account for SREC holders.
- SRECs are tied to generation of MWh since March 1, 2004. Systems less than 10 kW use an estimate. Larger systems supply meter reads.
- Buyers and Sellers make offers via the registry.
- SREC holders sell "off-line" when they are satisfied with an offer.
- The administrator will verify the generation, the sales, and the ultimate retirement of SRECs.

# *NJCEP SREC Financial Example*

- Assume a 100 kW solar energy system costs $650,000 and receives a CORE rebate of $390,000 (60%) for a net system cost of $260,000.
- The energy generation or savings over 20 years is 2.4 m kWhs @ $ 0.12 / kWh is $288,000.
- An SREC value of $150 adds an additional $90,000 in the first five years for total return of $378,000
- First five years: $72,000 energy savings + $90,000 SREC = $162,000.
- Net return after twenty years would approximate $118,000 or 6%, assumes constant electricity costs and SREC value

# *Resources*

Renewables www.njcep.com
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Energy Efficiency www.njcleanenergy.com
Office of Clean Energy www.bpu.state.nj.us

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